

# 54-Year-Old Male with High-Grade Prostatic Intraepithelial Neoplasia on Prostate Biopsy

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## CASE REPORT

A 54-year-old male healthy male is referred for prostate cancer evaluation after being found to have an elevated prostate-specific antigen level (PSA) of 4.5 ng/dL on a routine screening examination. He denies any urologic complaints, is healthy without any medical problems, denies any family history of cancer, does

not smoke, and leads a healthy and active lifestyle. Physical examination is unremarkable, and digital rectal examination is benign. Prostate biopsies are performed secondary to the elevated PSA. Pathological review of the biopsies reveals high-grade prostatic intraepithelial neoplasia (HGPIN) with a predominant pattern of flat/tufting in 3/12 biopsy cores.

## MANAGEMENT ISSUES

1. Does the patient need repeat biopsies? If so, please explain.

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2. What if HGPIN is repeated on the next biopsy? How would you proceed?

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3. What follow-up is recommended?

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## Discussion of Last Issue's Case Scenario

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IN THE LAST ISSUE, DR. MICHAEL B. CHANCELLOR AND COLLEAGUES PRESENTED THIS CASE REPORT:

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A 72-year-old woman presents with a 4-month history of voiding symptoms after a tension-free vaginal tape (TVT) sling operation.

The patient had a 3-year history of progressively worsening stress urinary incontinence. She underwent a vaginal hysterectomy and Kelly plication 15 years ago. The TVT sling was reportedly performed without complication at an outside hospital. The operative report stated that the procedure was performed under general anesthesia. Postoperatively, she was in urinary retention and was initially managed with an indwelling urethral catheter for 1 week, followed by intermittent catheterization for 1 month. Her past medical history was significant for a mild stroke without significant neurological deficit.

Currently, she reports pain in the right side of her vagina that radiates to the right side of her pubic symphysis area and into the right side of her rectum. She has had four urinary tract infections since the sling operation. Other urological symptoms include urgency, frequency, nocturia (4 times per night), and inability to void sitting down. She had a normal urinalysis and culture.

An initial history and physical examination were performed, with subsequent cystoscopy and video-urodynamic studies. Pelvic examination and cystoscopy revealed no foreign body in the bladder or urethra. There appeared to be an 80-degree angulation in the mid-urethra. Urodynamic study revealed an involuntary detrusor contraction at 200 mL with voiding pressure of 38 cm H<sub>2</sub>O and a maximum flow of 12 mL/sec.

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THESE WERE THE MANAGEMENT OPTIONS OFFERED:

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|--|--|
| <input type="checkbox"/> 1. $\alpha$ -blocker          | <input type="checkbox"/> 4. Transvaginal urethrolisis    |
| <input type="checkbox"/> 2. Oxybutynin                 | <input type="checkbox"/> 5. Pelvic floor biofeedback     |
| <input type="checkbox"/> 3. Urethral dilation/traction | <input type="checkbox"/> 6. Sacral nerve neuromodulation |

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### AUTHOR'S DISCUSSION

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The post-operative complication of urethral obstruction following a TVT procedure varies from approximately 2.2% to 17% of cases.<sup>1-3</sup> Although the TVT procedure has been introduced as a "tension-free" vaginal tape, it is clear that the sling has tension that is applied by the surgeon which can create urethral obstruction.<sup>4</sup> Thus, a sling that is properly placed mid-urethrally may be obstructive if the tension is too high, if the direction of traction is inappropriate, or if there is secondary fibrosis along the sling. In this context, fine-tuning of the tension of the TVT sling, based on coughing with a bladder volume of 300 mL while supine, is arbitrary.

Sanders and colleagues recently looked at the risk of urethral obstruction in 45 women 1 year after the TVT procedure. Of the 45 women who were treated, 39 (87%) were subjectively cured, and 6 (13%) improved. The objective cure rate was 88%. Subjectively, 78% of the patients reported that the voiding phase had become more difficult,

and the spontaneous flow curve changed to a more obstructive pattern in 40%, with the mean urinary peak flow rate and the mean average flow rate decreasing significantly. The residual urine volume increased significantly, although no patient had volumes of > 25% of their bladder capacity. During the pressure-flow study, the maximum flow rate decreased, and the urethral resistance factor increased significantly. This study indicates that TVT affects the voiding phase both subjectively and objectively.<sup>5</sup> Information available on voiding phase changes after TVT is scarce. The Sanders study and others have shown that a patient can be severely obstructed without having a significant residual urine volume.<sup>5,6</sup> Our experience over the past decade and with this particular patient are in agreement with Sanders and colleagues, as all conclude that when a woman does not have high residual urine, it does not mean that she does not have urethral obstruction.<sup>5</sup>

This patient's urodynamic tracing is illustrated in Figure 1.

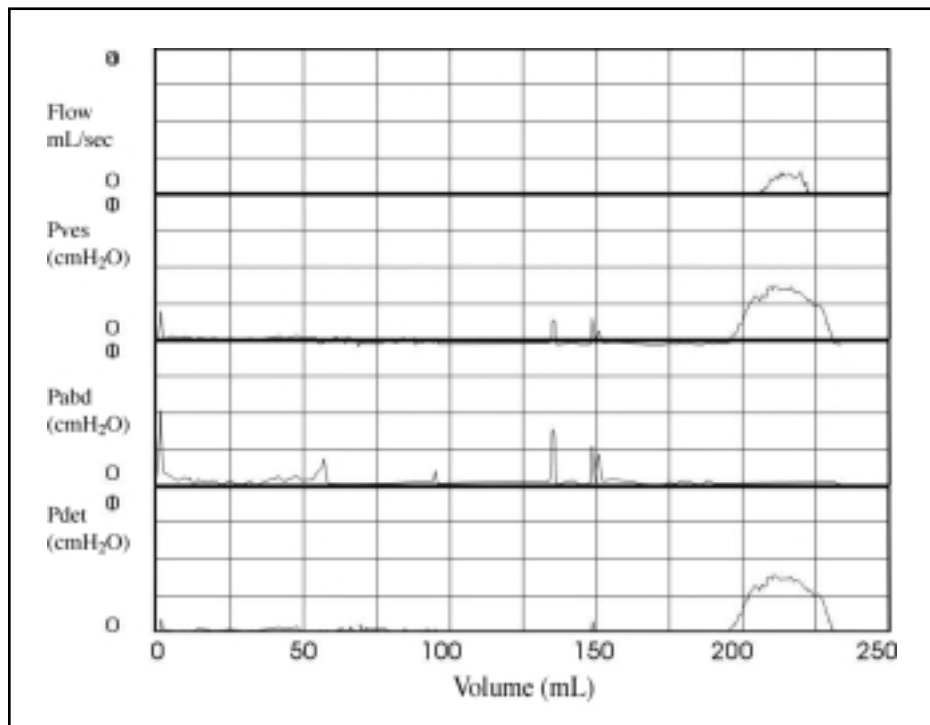


Figure 1. Patient developed an involuntary bladder contraction at 195 mL capacity of detrusor pressure of 38 cm H<sub>2</sub>O. Flow, Uroflow; Pves, intravesical pressure, Pabd, abdominal pressure, Pdet, subtracted detrusor pressure.

Although the voiding pressure was 38 cm H<sub>2</sub>O, we think it is important to remember that the pressure-flow nomogram that is derived from men with and without obstruction cannot be applied to women. Her clinical history is highly suggestive of obstruction. Furthermore, the combination of a decreased  $V_{max}$  and a voiding pressure of 38 cm H<sub>2</sub>O are also indicative of obstruction.

What about the patient's overactive bladder symptoms and involuntary detrusor contraction on urodynamic study? Should these be treated first? Our experience with treating overactive bladder symptoms first when there is high index of suspicion for urethral obstruction has not been good. We feel strongly that if the problem is obstruction, then relief of this obstruction is the first priority. If she still has overactive bladder symptoms after resolution of the urethral obstruction, then anticholinergic agents, biofeedback, or sacral neuromodulation may be considered.

What is the most effective method to relieve the urethral obstruction following a TVT procedure? Some have tried  $\alpha$ -blocker therapy and/or urethral dilation/traction.<sup>2,7</sup> Urethral dilation can be performed with gradually increasing dilators. Urethral traction is performed with a urethral sound placed in the urethra with gentle downward pressure in an attempt to loosen the tape. Klutke and colleagues have tried this in 5 obstructed patients, none of whom had any improvement.<sup>2</sup> Urethral traction is unlikely to improve the patient's pelvic pain symptoms in this case scenario.

Therefore, we agree with Klutke that office attempts to adjust the tape tension are rarely successful, and should probably not be attempted.<sup>2</sup> Also, if the patient is highly frustrated, and it has been more than 3 months since her procedure, especially when there is a synthetic material under the urethra, the odds of cure with  $\alpha$ -blocker and urethral dilation/traction are low.

There are a few existing methods for performing transvaginal urethrolisis following the TVT procedure. Perhaps the most common technique is to make a small midline incision approximately 2 cm in length and transect the tape in the midline below the urethra.<sup>1,2,6,8,9</sup> Another method involves a similar incision with isolation of the tape and subsequent traction on the tape until it is loosened approximately 1 cm.<sup>2</sup> Klutke and colleagues have performed both TVT incision and TVT transection methods of urethrolisis in 17 patients. All 17 patients voided to completion within 24 hours of release and had improved symptoms of outlet obstruction. Of the 17 patients, 16 remained dry after urethrolisis. Other methods of urethrolisis attempt to remove the entire tape.<sup>10</sup> This has been noted to be extremely difficult because of the dense scarring caused by the tape; therefore, a portion of the tape is often removed to relieve the obstruction.

In summary, it is not clear if transecting, loosening, or removing portions of the tape is the optimal method of transvaginal urethrolisis following TVT. However, all meth-

ods appear effective in relieving the obstruction, and all can be done on an outpatient basis in less than 20 minutes. The improvement is immediate and generally permanent. In the reported literature, the risk of fistula formation following one of these transvaginal urethrolisis procedures is extremely unlikely. The risk of recurrent stress incontinence following transvaginal urethrolisis appears to be less than 10%.

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